

AQA 1.6 Extra Questions (answers are at the end)

- Q1.** (a) Nucleic acids, such as DNA, are polymers, made up of many repeating monomer units. Name the monomer from which nucleic acids are made.

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(1)

- (b) The table shows the percentage of different bases in the DNA of some organisms.

Organism	Percentage of each base			
	Adenine	Guanine	Cytosine	Thymine
Human	31.2	18.8	18.8	31.2
Cow	27.9	22.1	22.1	27.9
Salmon	29.4	20.6	20.6	29.4
Rat	28.6			
Virus	24.7	24.1	18.5	32.7

- (i) Calculate the missing figures for rat DNA and write them into the table.
- (ii) The virus has single-stranded DNA as its genetic material. Explain the evidence from the table which suggests that the DNA is single-stranded.

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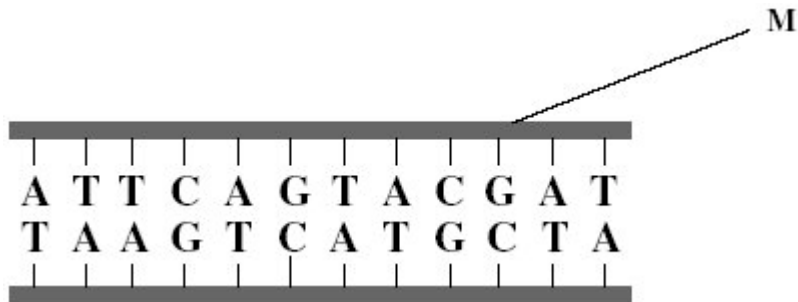
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(2)

(Total 5 marks)

Q2. The diagram shows part of a DNA molecule.



(a) Name the **two** components of the part of the DNA molecule labelled **M**.

1

2

(2)

(b) What is the maximum number of amino acids for which this piece of DNA could code?

(1)

(c) Scientists calculated the percentage of different bases in the DNA from a species of bacterium. They found that 14% of the bases were guanine.

(i) What percentage of the bases in this species of bacterium was cytosine?

Answer

(1)

(ii) What percentage of the bases in this species of bacterium was adenine?

Answer

(1)

- (d) The scientists found that, in a second species of bacterium, 29% of the bases were guanine.

Explain the difference in the percentage of guanine bases in the two species of bacterium.

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(2)
(Total 7 marks)

M1.	(a)	nucleotide;	1	
	(b)	(i)	21.4, 21.4; 28.6;	2
		(ii)	amounts of A and T /C and G/complementary bases different; therefore no base-pairing;	2 max
				[5]

M2.	(a)	Phosphate;		
		Deoxyribose;		
		<i>Q Candidates must specify deoxyribose. This term is a specification requirement. Ignore anything that is not incorrect.</i>	2	
	(b)	4;	1	
	(c)	(i)	14;	1
		(ii)	36;	
		<i>If (c)(i) incorrect accept [50 – (c)(i)]</i>	1	
	(d)	Different proteins;		
		Different genes;		
		Different (DNA) base sequences;	2 max	[7]